RTD UPDATES: Area Studies

Data updates from the Resources and Technology Division

Economic Research Service
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Upper Snake River Basin Area Study Links Agricultural Production and Natural Resource Data

- **Study area covers 35,000 square miles of southwestern Idaho and parts of Nevada, Utah and Wyoming; about 25% is agricultural land with 42% of this in four crops (wheat, alfalfa, barley, and potatoes).**

- **One-half or more of land in the four major crops is highly erodible and 56% is highly leachable. Irrigation ranges from 72% of wheat to 99% of potatoes and averages about 50% of all agricultural land.**

- **Farmers used professional pest scouting on 13% of potato acres, soil/tissue testing for nutrients on about 72%, and irrigation scheduling by consultant on 30%.**

This issue of **RTD UPDATES** summarizes the Upper Snake River Basin (Idaho) survey data. It presents initial information on conservation practices, irrigation practices, pest and nutrient management practices, chemical use, and tillage methods. In addition, soil characteristics were used to determine erodibility and leaching potential. The Area Studies project is a data collection and modeling effort designed to assess national policy impacts. The focus is on the development of multi-year, farm-level data that link production activities to environmental characteristics for selected regions. The effort involves the Economic Research Service (ERS), the Soil Conservation Service (SCS), U.S. Geological Survey (USGS), and the National Agricultural Statistics Service (NASS).

The Upper Snake River Basin (Idaho) was one of four areas chosen in 1992. Others were the Iowa/Illinois Basins, the Albemarle-Pamlico Drainage Area (Virginia, North Carolina), and the Georgia/Florida Coastal Plains. These sites were selected from those included in USGS's National Water Quality Assessment Program and were areas with significant cropland and agricultural chemical use levels.

A survey in each area collected detailed information on production technologies, cropping systems, and agricultural practices at both the field and whole farm level. The survey sample points were chosen to correspond with National Resource Inventory (NRI) sample points. SCS conducts an NRI every 5 years, collecting soil, water, and other natural resource data for nearly a million sample sites nationwide. The use of the NRI points establishes a link between production activities and resource characteristics.

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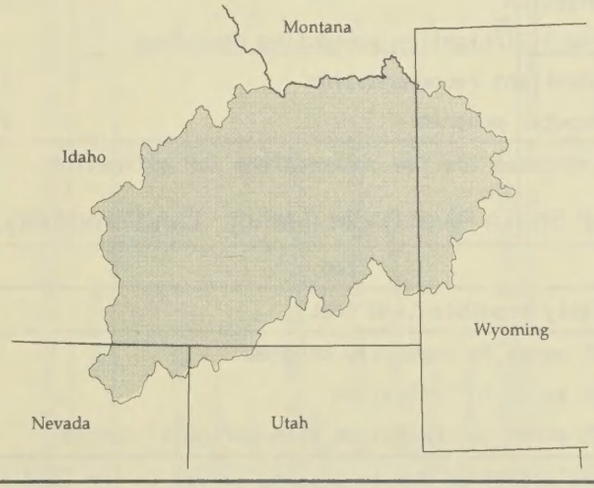
About RTD UPDATES

RTD UPDATES is a semimonthly series featuring data relating to agricultural resources, the environment, food safety, and technology. These **UPDATES** report recent data from surveys of farm operators and others knowledgeable about changing agricultural resource conditions, with only minimal interpretation or analysis. Please contact the individual listed at the end of the text for additional information about the data in this **UPDATE**. If you would like to be added to the mailing list or have other questions about **RTD UPDATES**, contact Richard Magleby, (202) 219-0436.

Upper Snake River Basin Area Study



Upper Snake River Basin Area (Idaho): Major crops and uses, 1992

Item	Alfalfa	Barley	Potatoes	Wheat	Pasture	CRP	Range-land	Other
Acres in crop	619,090	456,680	421,510	903,110	809,610	641,345	1,077,900	831,455
% Acres in crop	11	8	7	16	14	11	19	14
Yield per acre	5 tons	86 bu.	327 cwt.	75 bu.	N/A	N/A	N/A	N/A
Commodity program acres	N/A	166,309	N/A	588,586	N/A	N/A	N/A	N/A

The total number of acres in agricultural land in the Upper Snake River Basin is 5,760,600. N/A indicates not applicable.

Upper Snake River Basin Area (Idaho): Conservation practice use, 1992

Item	Alfalfa	Barley	Potatoes	Wheat	Pasture	CRP	Rangeland	All ag. land
	Percent of acres in crop							
Conservation plan	63	74	78	86	29	88	8	58
Chiseling and subsoiling	2	43	68	45	*	0	0	20
Conservation cover	12	17	15	12	*	88	0	18
Cover and green manure crop	*	4	10	4	*	0	0	3
Crop residue use	3	35	30	39	*	0	*	17
Grasses and legumes in rotation	9	*	*	2	0	0	0	2
Terrace	0	*	5	3	*	0	0	2
Grazing land protection	*	N/A	N/A	N/A	9	0	13	4
Pasture and hay management	37	N/A	N/A	N/A	12	0	*	7
Planned grazing system	3	N/A	N/A	N/A	20	0	25	8
No-till	0	5	*	6	0	0	0	2
Other conservation tillage	*	25	26	34	*	0	0	12

* Indicates too few observations for estimation. N/A indicates not applicable. Other conservation tillage includes ridge, mulch, and other conservation tillage.

Upper Snake River Basin Area (Idaho): Irrigation practices, 1992

Item	Alfalfa	Barley	Potatoes	Wheat	Pasture	All ag. land
	Percent of acres in crop					
Total irrigated	80	75	99	72	43	49
Sprinkler system	52	52	96	64	11	34
Gravity system	25	22	**	7	24	13
Other	3	1	3	1	8	2
Fertigation	**	**	71	10	0	8
Chemigation	0	**	29	3	0	3
Source of irrigation scheduling decisions:						
Consultant recommendation	5	3	30	13	0	6
Computer program	3	3	7	5	0	2

** Indicates too few observations for estimation.

Upper Snake River Basin (Idaho): Land erodibility, 1992

Item	Alfalfa	Barley	Potatoes	Wheat
% Highly erodible land (HEL)	49 - 63	49 - 53	50	63 - 67
% HEL acres in commodity program	N/A	12 - 15	N/A	65 - 69
% HEL acres in irrigation	74 - 99	77 - 93	99	69 - 76
% HEL acres in irrigation with sprinkler system	68 - 70	57 - 63	99	94 - 95

Ranges are given due to missing values in the land erodibility data. HEL operated by farmers participating in government programs is subject to conservation compliance.
Source: 1992 Area Study Survey, Economic Research Service, USDA.

Upper Snake River Basin (Idaho): Pest management practices, 1992

Practice	Alfalfa	Barley	Potatoes	Wheat
	Percent of acres in crop			
Type of pest management:				
Biological pest control	*	6	6	3
Pest resistant varieties	26	10	11	17
Destroy residues for host-free zone	13	41	45	42
Rotations	35	61	82	72
Pest control factor in timing/location	6	12	13	18
Source of pest management advice:				
On-farm pest specialist	4	5	18	12
Extension/university/State/Federal	7	14	27	13
Chemical dealer	37	69	75	57
Professional scout	0	3	13	9
Effect of advice on pesticide usage:				
Advice increased usage	11	17	22	9
Advice decreased usage	3	8	12	9
Advice had no effect on usage	25	46	45	40

* indicates too few observations for estimation.

Upper Snake River Basin (Idaho): Nutrient management practices, 1992

Practice	Alfalfa	Barley	Potatoes	Wheat
	Percent of acres in crop			
Soil nitrogen test	10	30	72	41
Tissue analysis	5	4	73	7
Manure usage	11	3	12	4
Most important factor influencing nitrogen use:				
Fertilizer company recommendation	4	21	12	11
Consultant recommendation	*	10	12	8
Crop appearance	4	*	*	5
Soil/tissue test	*	12	51	24
Standard amount for crop/rotation	14	36	12	34

* indicates too few observations for estimation.

Source: 1992 Area Study Survey, Economic Research Service, USDA.

Upper Snake River Basin (Idaho): Average application rates of pesticides, 1992

Pesticide	Barley		Potatoes		Wheat	
	Lbs/ acre	Percent of acres	Lbs/ acre	Percent of acres	Lbs/ acre	Percent of acres
Herbicides:						
2,4-D	0.49	72	--	--	0.55	72
Bromoxynil	0.25	10	*	*	0.29	21
EPTC	*	*	2.7	48	--	--
MCPA	0.25	12	*	*	0.29	23
Metribuzin	*	*	0.5	84	*	*
Phorate	--	--	2.7	50	--	--
Thifensulfuron	0.02	13	*	*	0.01	27
Triallate	1.26	38	--	--	0.94	5
Tribenuron-methyl	0.01	17	*	*	0.005	28
Fungicides:						
Chlorathalonil	--	--	1.2	30	--	--

-- indicates no use reported.
* indicates too few observations for estimation.

Upper Snake River Basin (Idaho): Nutrient use, 1992

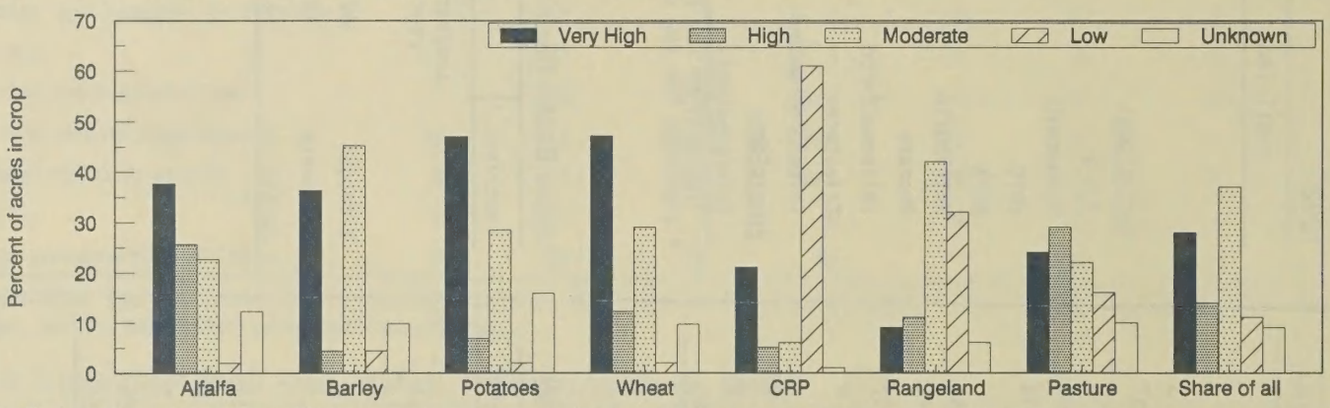
Nutrient	Barley		Potatoes		Wheat	
	Lbs/acre/ year	Percent of acres	Lbs/acre/ year	Percent of acres	Lbs/acre/ year	Percent of acres
Nitrogen	69	85	233	98	102	95
Phosphate	18	50	199	99	25	43
Potash	4	17	87	75	4	12

Upper Snake River Basin (Idaho): Gross farm income by sales class, 1992

Gross value of farm sales ($)	Cash grains	Other field crops	Beef, hogs and sheep	Dairy & other livestock	CRP only
			Percent of farms		
0-9,999	3	2	10	9	12
10,000-19,999	4	2	8	0	15
20,000-29,999	3	1	4	0	18
30,000-39,999	4	1	4	10	9
40,000-59,999	5	5	9	2	28
60,000-99,999	17	9	14	17	18
100,000-249,999	33	15	24	17	0
250,000-499,999	16	16	13	7	0
500,000 and up	15	49	14	38	0
Total	100	100	100	100	100
Share of total	25	44	20	6	5

Source: 1992 Area Study Survey, Economic Research Service, USDA.

Upper Snake River Basin Area (Idaho): Soil leaching potential index*



Soil leaching potential (SLP) = texture component + organic matter component + pH component

* Potential of soils to leach highly soluble chemicals, based on intrinsic soil properties. Algorithm developed by J.B. Weber and R.L. Warren, North Carolina State University, in Weber, J.B. and R.L. Warren. "Herbicide Behavior in Soils: A Pesticide/Soil Ranking System for Minimizing Groundwater Contamination" Proceedings of the Northeastern Weed Science Society Vol. 46, 1992.

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